

#### ABSTRACT OF THE DISCLOSURE

A gas concentration detector prevents deviation in output due to a difference in oxygen reactivity between electrode materials to accurately detect a specific gas component in a gas to be measured, such as NO<sub>x</sub> in an exhaust gas. A sensor element in an NO<sub>x</sub> sensor has a pump cell in a first chamber and a sensor cell for decomposing NO<sub>x</sub> and any remaining oxygen and a monitor cell for decomposing only remaining oxygen in a second chamber. An NO<sub>x</sub> concentration is detected based on a difference in current output between the sensor cell and the monitor cell. Since the sensor cell and the monitor cell have different oxygen reactivities, an output of the monitor cell is smoothed through a band-pass filter or the like so that output responses of the sensor cell and the monitor cell are made to substantially match each other, thereby eliminating any deviation in output.